PATENT COOPERATION TREATY

From the		_		1 COORE	RATION TREE	REC'D OB SEP ZUE
To:	ONAL SEARCH		ORITY			PCP
·	AR DRIVE N, TX 77042					EXTENT OBINION OF THE
HOUSTON	1, 17t 11042				•	TTEN OPINION OF THE ONAL SEARCHING AUTHORITY
					•	(PCT Rule 43bis.1)
		·			Date of mailing (day/month/year)	06 SEP 2006
Applicant'	s or agent's file re	eference			FOR FURTHER	ACTION See paragraph 2 below
AUCH.00	10					
Internation	al application No	•	Internatio	onal filing date	(day/month/year)	Priority date (day/month/year)
PCT/US05	5/09723		23 Marc	h 2005 (23.03.	2005)	24 March 2004 (24.03.2004)
l .	al Patent Classifi					
IPC:	H01J 7/24(2006.	01),17/36(2	006.01);H	05B 31/26(200	06.01),4 1/0 0(2006.0	1)
USPC: 3 Applicant	315/111.21-111.7	1,340,344,3	+0			·
	RLONIE, RICHA	ARD.		•		
AUCHIE	REONIE, RICII					
L. This c	pinion contains it	ndications re	lating to th	ne following ite	ms:	
	Box No. I	Basis of the	opinion			
	Box No. II	Priority			·	
	Box No. III	Non-establ	ishment of	opinion with r	egard to novelty, inve	entive step and industrial applicability
	Box No. IV Lack of unity of invention					
	Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					
	Box No. VI Certain documents cited					
	Box No. VII			international a		
	Box No. VIII	(Certain obs	ervations on th	e international applic	ation
2. FUR	THER ACTIO	N				and the second of the
Interr	national Prelimina	ary Examini	ng Author the IPEA	and the chosen	BYCHDI INMI BIIIC IRDES	be considered to be a written opinion of the not apply where the applicant chooses an le International Bureau under Rule 66. 1 bis (b) idered.
IPEA maili	a written replying of Form PCT/	together, w. ISA/220 or t	here appro before the	expiration of 2:	menbucus, ocuse i	PEA, the applicant is invited to submit to the he expiration of 3 months from the date of iority date, whichever expires later.
For f	urther options, se	e Form PCT	/ISA/220.			· · · · · · · · · · · · · · · · · · ·
3. For f	urther details, see	notes to Fo	m PCT/IS	SA/220.		
Name an	d matting address	of the ISA/	US	Date of comp	letion of this	Authorized officer
	Mail Stop PCT, Au	in: ISA/US		opinion		Leith A. Al-Nazer / (Almiss luth
	Commissioner for F P.O. Box 1450 Alexandria, Virgini			26 June 2006	(26.06.2006)	Telephone No. 703-308-1782
Facsimile	No. (571) 273-33	201				1
Form PCT	/ISA/237 (cover s	meet) (April	4002)			

International application No.
PCT/US05/09723

	INTERNATIONAL SEARCHING NOTES	
Box No.	o. I Basis of this opinion	
		•
1. With re	regard to the language, this opinion has been established on the basis of:	
	the language in which it was filed	a section for the purposes of
	a translation of the international application into, which is the langua international search (Rules 12.3(a) and 23.1(b)).	
2. With claime	regard to any nucleotide and/or amino acid sequence disclosed in the ed invention, this opinion has been established on the basis of:	international application and necessary to the
a.	type of material	•
	a sequence listing	
	table(s) related to the sequence listing	•
b.	format of material	•
	on paper	
	in electronic form	·
c.	time of filing/furnishing	
	contained in the international application as filed.	
	filed together with the international application in electronic form.	
	furnished subsequently to this Authority for the purposes of search.	
3.	In addition, in the case that more than one version or copy of a sequence filed or furnished, the required statements that the information in the subthe application as filed or does not go beyond the application as filed, as	e listing and/or table(s) relating thereto has been sequent or additional copies is identical to that in appropriate, were furnished.
4. Add	ditional comments:	
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Form PCT/ISA/237 (Box No. V) (April 2005)

International application No. PCT/US05/09723

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
1. Statement	•		·			
Novelty (N)	Claims	6-15		YE		
		1-5 and 16-25		NO		
	Claims	6 15		YE		
Inventive step (IS)		6-15 1-5 and 16-25				
			-			
Industrial applicability (IA)	Claims	1-25		YE NC		
	Claims	NONE				
•	<u></u>					
2. Citations and explanations:				•		
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International application No.

PCT/US05/09723

Box No. VIII	Certain	observations	on the	international	application
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The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claim 4 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 4 is indefinite for the following reason(s):

Claim 4 recites "the second current path" in lines 2-3. There is a lack of antecedent basis for this limitation in the claim.

Form PCT/ISA/237 (Box No. VIII) (April 2005)

International application No. PCT/US05/09723

Γ	Supplemental Box	
_	In case the space in any of the preceding boxes is not sufficient.	
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		•
	·	
	V. 2. Citations and Explanations: Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated be With respect to claims 1-5 and 16-25, Mendel teaches a pulsed power system for suppower system comprising an inductive energy storage circuit including a current source and plasma opening switch having a transmission line coupling the current source to the load for the transmission line extending away from a first region toward a second region near the load having a closed state and an open state (figure 1), the plasma opening switch changing from plasma discharge in the plasma opening switch is driven by magnetic force from the first region the pulsed power system includes electrical conductors (18; figure 1) arranged for pronfiguration in the first region to magnetically latch the plasma discharge in the first region storage circuit with current from the current source (figure 1), and current flowing along the total load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma dirive the plasma discharge toward the second region (figure 1).	a plasma opening switch (7; figure 1), the supplying current to the load (figure 1), and (figure 1), the plasma opening switch the closed state to the open state when a gion toward the second region (figure 1); providing a stabilizing magnetic field and during charging of the inductive energy the transmission line from the current source that discharge from the first region and
	Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated b	y U.S. Patent No. 6,304,042 to Savage et
	With respect to claims 1-5 and 16-25, Savage teaches a pulsed power system for suppower system comprising an inductive energy storage circuit including a current source and plasma opening switch having a transmission line ("anode and cathode"; figures 1 and 2) consupplying current to the load, the transmission line extending away from a first region toward and 2), the plasma opening switch having a closed state and an open state, the plasma open to the open state when a plasma discharge in the plasma opening switch is driven by magnet second region (column 4, lines 45-60); wherein the pulsed power system includes electrical arranged for providing a stabilizing magnetic field configuration in the first region to magnetic tregion during charging of the inductive energy storage circuit with current from the current region during charging of the inductive energy storage circuit with current from the current region during charging of the inductive energy storage circuit with current from the current region during charging of the inductive energy storage circuit with current from the current region during charging of the inductive energy storage circuit with current from the current source to the	plying pulsed power to a load, the pulsed a plasma opening switch (figure 2), the oupling the current source to the load for ard a second region near the load (figures 1 ing switch changing from the closed state aric force from the first region toward the conductors (20 and 22; figures 1 and 2) etically latch the plasma discharge in the arrent source (figures 1 and 2; column 4,

lines 45-60), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second Form PCT/ISA/237 (Supplemental Box) (April 2005)

International application No. PCT/US05/09723

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

region (figures 1 and 2; column 4, lines 45-60).

Claims 6-15 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest one or more of the elements recited in dependent claim 6. Specifically, the prior art of record does not teach or suggest the electrical conductors arranged for providing the stabilizing magnetic field configuration including at least one electrical conductor in a first current path for carrying a first current component tending to magnetically force the plasma discharge toward the second region when the plasma discharge is in the first region, and at least one electrical conductor in a second current path for carrying a second current component tending to magnetically force the plasma discharge away from the second region when the plasma discharge is in the first region.

Claims1-25 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

PATENT COOPERATION TREATY

From the	MENI COOPER	ATION TREA	REC'D OB SEP ZUES
INTERNATIONAL SEARCHING AUTHOR	RITY		MARON SEP ZUES
To: RICHARD AUCHTERLONIE			PCT
10022 BRIAR DRIVE	·		
HOUSTON, TX 77042			TTEN OPINION OF THE ONAL SEARCHING AUTHORITY
-			(PCT Rule 43bis.1)
	1 1	Date of mailing (day/month/year)	06 SEP 2006
Applicant's or agent's file reference		FOR FURTHER	ACTION See paragraph 2 below
AUCH.0010	- Land Eliza data (a		Priority date (day/month/year)
	nternational filing date (a		24 March 2004 (24.03.2004)
PCT/US05/09723 2 2 International Patent Classification (IPC) or	3 March 2005 (23.03.20 both national classification	on and IPC	24 March 2004 (24.03.2004)
			1)
IPC: H01J 7/24(2006.01),17/36(2006 USPC: 315/111.21-111.71,340,344,348	0.01),110515 51/20(2000	.01/, 12:00(20:00:0	
Applicant			
AUCHTERLONIE, RICHARD			
1. This opinion contains indications relati	ng to the following items	S:	
Box No. I Basis of the of	pinion		
Box No. II Priority			
Box No. III Non-establish	ment of opinion with reg	ard to novelty, inve	entive step and industrial applicability
Box No. IV Lack of unity			
Box No. V Reasoned state applicability;	ement under Rule 43bis. citations and explanation	1(a)(i) with regard is supporting such s	to novelty, inventive step or industrial tatement
Box No. VI Certain docum	nents cited		
Box No. VII Certain defect	ts in the international app	olication	
Box No. VIII Cert	tain observations on the i	international applica	ation .
2. FURTHER ACTION			
I to the live in a ment Transpired	Authority ("IPEA") exc : IPEA and the chosen IF	PEA has notified th	be considered to be a written opinion of the not apply where the applicant chooses an e International Bureau under Rule 66.1 bis(b) dered.
mailing of Form PCT/ISA/220 or before	e appropriate, with ame ore the expiration of 22 n	municans, octore u	PEA, the applicant is invited to submit to the ne expiration of 3 months from the date of ority date, whichever expires later.
For further options, see Form PCT/IS	M/22U.		
3. For further details, see notes to Form			
Name and mailing address of the ISA/ US	Date of complet	ion of this	Leith A. Al-Nozer / (Almost Cuttin
Mail Stop PCT, Attn: ISA/US Commissioner for Patents	opinion		Leith A. Al-Nozer / (AlMC) Lug
P.O. Box 1450 Alexandria, Virginia 22313-1450	26 June 2006 (2	6.06.2006)	Telephone No. 703-308-1782
Facsimile No. (571) 273-3201	15)		
Form PCT/ISA/237 (cover sheet) (April 200	,,,		/

International application No.
PCT/US05/09723

INTERNATIONAL DELLES
Box No. I Basis of this opinion
has been established on the basis of:
1. With regard to the language, this opinion has been established on the basis of:
the international application in the language in which it was filed a translation of the international application into, which is the language of a translation furnished for the purposes of
international search (Rules 12.3(a) and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
a. type of material
a sequence listing
rable(s) related to the sequence listing
b. format of material
on paper
in electronic form
c. time of filing/furnishing
contained in the international application as filed.
filed together with the international application in electronic form.
furnished subsequently to this Authority for the purposes of search.
furnished subsequently to this Authority its the purpose
3. In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has bee filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that i the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:
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Form PCT. ISA/237(Box No. 1) (April 2005)

International application No. PCT/US05/09723

Box No. V Reasoned statement under Rule applicability; citations and expla	e 43 <i>bis</i> .1(a)(i) anations supp	with regard to novelty, in orting such statement	eventive step or industrial
1. Statement		-	
Novelty (N)	Claims	6-15	YES
140veity (14)		1-5 and 16-25	NO
			YES
Inventive step (IS)		6-15	NO
	Claims	1-5 and 16-25	
	Claime	1-25	YES
Industrial applicability (IA)		NONE	NO
		110.12	
2. Citations and explanations:		- 	
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Form PCT/ISA/237 (Box No. V) (April 2005)

International application No.

PCT/US05/09723

Box No. VIII	Certain observations on the international application
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The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claim 4 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 4 is indefinite for the following reason(s):

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Form PCT/ISA/237 (Box No. VIII) (April 2005)

International application No. PCT/US05/09723

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7. 2. Citations and Explanations: Claims 1-5 and 16-25 lack	novelty under PCT	Article 33(2) as be	ing anticipated by	U.S. Patent No. 4	1,812,715 to Mei
Claims 1-5 and 16-25 lack With respect to claims 1-5 and ower system comprising an inductive plasma opening switch having a trans	1 10-52' Michael res	terren et langage le .		-tooms opening s	witch (/: TIQUE

Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 6,304,042 to Savage et

With respect to claims 1-5 and 16-25, Savage teaches a pulsed power system for supplying pulsed power to a load, the pulsed al. power system comprising an inductive energy storage circuit including a current source and a plasma opening switch (figure 2), the plasma opening switch having a transmission line ("anode and cathode"; figures 1 and 2) coupling the current source to the load for supplying current to the load, the transmission line extending away from a first region toward a second region near the load (figures 1 and 2), the plasma opening switch having a closed state and an open state, the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (column 4, lines 45-60); wherein the pulsed power system includes electrical conductors (20 and 22; figures 1 and 2) arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figures 1 and 2; column 4, lines 45-60), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second

having a closed state and an open state (figure 1), the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (figure 1);

configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figure 1), and current flowing along the transmission line from the current source

wherein the pulsed power system includes electrical conductors (18; figure 1) arranged for providing a stabilizing magnetic field

to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and

Form PCT/ISA/237 (Supplemental Box) (April 2005)

drive the plasma discharge toward the second region (figure 1).

International application No. PCT/US05/09723

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

region (figures 1 and 2; column 4, lines 45-60).

Claims 6-15 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest one or more of the elements recited in dependent claim 6. Specifically, the prior art of record does not teach or suggest the electrical conductors arranged for providing the stabilizing magnetic field configuration including at least one electrical conductor in a first current path for carrying a first current component tending to magnetically force the plasma discharge toward the second region when the plasma discharge is in the first region, and at least one electrical conductor in a second current path for carrying a second current component tending to magnetically force the plasma discharge away from the second region when the plasma discharge is in the first region.

Claims1-25 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.